



US005968560A

United States Patent [19]

Briere et al.

[11] **Patent Number:** 5,968,560[45] **Date of Patent:** Oct. 19, 1999**[54] BLOW MOLDING DEVICE FOR PRODUCING THERMOPLASTIC CONTAINERS**

5,332,384 7/1994 Abramati 425/522
 5,346,386 9/1994 Albrecht et al. 425/541
 5,358,396 10/1994 Giesen 425/192 R

FOREIGN PATENT DOCUMENTS

2057196 5/1971 France 249/102
 2613979 10/1988 France .
 2646802 11/1990 France .
 2653058 4/1991 France 425/522
 3613543 12/1986 Germany .
 3934495 12/1990 Germany .

OTHER PUBLICATIONS

"Quick-change systems add to blow molders' market reach", by Patrick A. Toensmeier, Modern Plastics International, Aug. 1991 (pp. 30-31).
 Patent Abstracts of Japan, vol. 12, No. 286 (M-727), Aug. 5, 1988, (Abstract of Japanese reference 63-062,710 dated Mar. 19, 1988).

Primary Examiner—Robert Davis
Attorney, Agent, or Firm—Sughrue, Mion, Zinn, Macpeak & Seas, PLLC

[75] **Inventors:** Dominique Briere, Le Havre; Léon Colisy, Saint Martin du Manoir; Paul La Barre, Sainte Adresse; Pascal Santals, Le Havre, all of France

[73] **Assignee:** Sidel, Le Havre, France

[21] **Appl. No.:** 08/945,089

[22] **PCT Filed:** Apr. 16, 1996

[86] **PCT No.:** PCT/FR96/00576

§ 371 Date: Oct. 17, 1997

§ 102(e) Date: Oct. 17, 1997

[87] **PCT Pub. No.:** WO96/33059

PCT Pub. Date: Oct. 24, 1996

[30] Foreign Application Priority Data

Apr. 19, 1995 [FR] France 95 04651

[51] **Int. Cl.⁶** B29C 49/56; B29C 33/30

[52] **U.S. Cl.** 425/192 R; 425/195; 425/522; 425/541; 249/102

[58] **Field of Search** 425/183, 192 R, 425/195, 522, 541; 249/102

[56] References Cited**U.S. PATENT DOCUMENTS**

467,881 1/1892 Fisher 249/102
 1,409,591 3/1922 Schavoir 249/102
 3,191,225 6/1965 Polka 425/541
 3,753,641 8/1973 Turner et al. 425/541
 3,784,344 1/1974 Korsch 425/526
 3,871,611 3/1975 Taketa 249/102
 4,072,456 2/1978 Appel et al. 425/183
 5,262,116 11/1993 Von Holdt, Sr. 425/192 R
 5,288,222 2/1994 Wieser 425/192 R

[57] ABSTRACT

The invention concerns a device for producing thermoplastic containers, in particular bottles, by the blow-molding or stretch blow-molding of a preheated preform. The device comprises at least one mould consisting of two half-molds (2) each supported by a mould carrier, the two mould carriers being movable relative to each other. Each half-mould (2) comprises a shell holder (9), supported by the respective mould carrier, and a shell (7) which is equipped with a half-impression (8) of the container to be obtained and can be rendered integral in a detachable manner with its shell holder (9) by rapid-fastening means (19-23). The shell (7) and the shell holder (9) are of complementary shapes such that they contact each other at least partially for heat conduction purposes whilst the pipes and connections for circulating and/or heating fluids are provided in the shell holder alone.

14 Claims, 3 Drawing Sheets